

WHAT IS CLAIMED IS:

1           1.    A telecommunications system for delivering a  
2   Short Message Service (SMS) message within a network  
3   capable of providing both voice services on a voice  
4   carrier and data services on a data only carrier, said  
5   telecommunications system comprising:

6           a mobile station (MS) supporting both voice services  
7   and data services, said MS being currently involved in a  
8   data session on said data only carrier; and

9           a node in wireless communication with said MS for  
10   receiving said SMS message, encapsulating said SMS  
11   message into an Internet Protocol (IP) packet and routing  
12   said SMS message to said MS as an electronic mail message  
13   over said data only carrier without disrupting said data  
14   session.

1           2.    The telecommunications system of Claim 1,  
2   wherein said node further operates to check whether said  
3   MS is involved in said data session prior to  
4   encapsulating said SMS message into said IP packet, said  
5   node transmitting said SMS message to said MS when said  
6   MS is not involved in said data session.

1           3.    The telecommunications system of Claim 2,  
2           wherein said MS transmits to said node a feature code  
3           indicating that said MS is in data mode when said data  
4           session begins, said node encapsulating said SMS message  
5           into said IP packet only when said node has received said  
6           feature code.

1           4.    The telecommunications system of Claim 3,  
2           wherein said node is a Mobile Services Switching Center.

1           5.    The telecommunications system of Claim 4,  
2           wherein said feature code is stored within a Visitor  
3           Location Register associated with said Mobile Services  
4           Switching Center.

1           6.    The telecommunications system of Claim 4,  
2           further comprising:

3                a Packet Data Service Node in wireless communication  
4           with said MS for said data session, said Mobile Services  
5           Switching Center routing said electronic message to said  
6           Packet Data Service Node for delivery of said electronic  
7           mail message to said MS.

1           7.    The telecommunications system of Claim 3,  
2           wherein said node is a Base Station Controller.

1           8.    The telecommunications system of Claim 7,  
2           further comprising:

3                a Packet Data Service Node in wireless communication  
4           with said MS for said data session, said Base Station  
5           Controller routing said electronic message to said Packet  
6           Data Service Node for delivery of said electronic mail  
7           message to said MS.

1           9.    The telecommunications system of Claim 7,  
2           wherein said Base Station Controller has a Packet Control  
3           Function therein for determining routing information  
4           associated with said MS for said data session, said Base  
5           Station Controller delivering said electronic mail  
6           message to said MS using said routing information.

1           10.   The telecommunications system of Claim 1,  
2           further comprising:

3                a Short Message Service Center for routing said SMS  
4           message to said node.

1           11. The telecommunications system of Claim 10,  
2       wherein said node tags said electronic mail message with  
3       a received indicator, said received indicator generating  
4       a response message to said node when said MS opens said  
5       electronic mail message, said node transmitting a  
6       delivery notification message to said Short Message  
7       Service Center upon receipt of said response message.

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1           12. The telecommunications system of Claim 1,  
2           wherein said electronic mail message is routed to said MS  
3           using an electronic mail address for said MS.

1           13. The telecommunications system of Claim 12,  
2           wherein said electronic mail address includes an  
3           International Mobile Subscriber Identity number of said  
4           MS at an Internet Service Provider of said MS.

1           14. The telecommunications system of Claim 1,  
2           wherein said network is a Code Division Multiple Access  
3           2000 network.

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1           15. A Mobile Services Switching Center for  
2     delivering a Short Message Service (SMS) message to a  
3     mobile station (MS) supporting both voice services and  
4     data services, said Mobile Services Switching Center  
5     comprising:

6           means for determining whether said MS is currently  
7     involved in a data session on a data only carrier; and  
8           conversion logic for encapsulating said SMS message  
9     into an Internet Protocol (IP) packet and routing said  
10    SMS message to said MS over said data only carrier as an  
11    electronic mail message when said MS is involved in said  
12    data session.

1           16. The Mobile Services Switching Center of Claim  
2     15, wherein said means for determining comprises a  
3     feature code indicating that said MS is involved in said  
4     data session, said feature code being sent by said MS at  
5     the start of said data session.

1           17. The Mobile Services Switching Center of Claim  
2           16, wherein said feature code is stored in a Visitor  
3           Location Register associated with said Mobile Services  
4           Switching Center.

1           18. The Mobile Services Switching Center of Claim  
2           15, further comprising:  
3           means for receiving said SMS message from a Short  
4           Message Service Center.

1           19. The Mobile Services Switching Center of Claim  
2           18, wherein said conversion logic tags said electronic  
3           mail message with a received indicator, said received  
4           indicator generating a response message to said Mobile  
5           Services Switching Center when said MS opens said  
6           electronic mail message.

1           20. The Mobile Services Switching Center of Claim  
2           19, further comprising:  
3           means for transmitting a delivery notification  
4           message to said Short Message Service Center upon receipt  
5           of said response message.

1           21. The Mobile Services Switching Center of Claim  
2           15, wherein said conversion logic routes said electronic  
3           mail message to said MS using an electronic mail address  
4           for said MS.

1           22. The Mobile Services Switching Center of Claim  
2           21, wherein said electronic mail address includes an  
3           International Mobile Subscriber Identity number of said  
4           MS at an Internet Service Provider of said MS.

1           23. A Base Station Controller for delivering a  
2           Short Message Service (SMS) message to a mobile station  
3           (MS) supporting both voice services and data services,  
4           said Base Station Controller comprising:

5           means for determining whether said MS is currently  
6           involved in a data session on a data only carrier; and

7           conversion logic for encapsulating said SMS message  
8           into an Internet Protocol (IP) packet and routing said  
9           SMS message to said MS over said data only carrier as an  
10          electronic mail message when said MS is involved in said  
11          data session.



1           24. The Base Station Controller of Claim 23,  
2           wherein said means for determining comprises a feature  
3           code indicating that said MS is involved in said data  
4           session, said feature code being sent by said MS at the  
5           start of said data session.

1           25. The Base Station Controller of Claim 23,  
2           further comprising:  
3           a Packet Control Function for determining routing  
4           information associated with said MS for said data  
5           session, said electronic mail message being delivered to  
6           said MS using said routing information.

1           26. The Base Station Controller of Claim 23,  
2           further comprising:  
3           means for receiving said SMS message from a Short  
4           Message Service Center.

1           27. The Base Station Controller of Claim 26,  
2           wherein said conversion logic tags said electronic mail  
3           message with a received indicator, said received  
4           indicator generating a response message to said Base  
5           Station Controller when said MS opens said electronic  
6           mail message.

1           28. The Base Station Controller of Claim 27,  
2           further comprising:

3           means for transmitting a delivery notification  
4           message to said Short Message Service Center upon receipt  
5           of said response message.

1           29. The Base Station Controller of Claim 23,  
2           wherein said conversion logic routes said electronic mail  
3           message to said MS using an electronic mail address for  
4           said MS.

1           30. The Base Station Controller of Claim 29,  
2           wherein said electronic mail address includes an  
3           International Mobile Subscriber Identity number of said  
4           MS at an Internet Service Provider of said MS.

1           31. A method for delivering a Short Message Service  
2       (SMS) message within a network capable of providing both  
3       voice services on a voice carrier and data services on a  
4       data only carrier, said method comprising:  
5           receiving at a node in wireless communication with  
6       a mobile station (MS) supporting both voice services and  
7       data services said SMS message;  
8           determining whether said MS is currently involved in  
9       a data session on said data only carrier;  
10          if not, routing said SMS message to said MS via said  
11       voice carrier; and  
12          if so:  
13              encapsulating said SMS message into an Internet  
14       Protocol (IP) packet, and  
15              routing said SMS message to said MS as an  
16       electronic mail message without disrupting said data  
17       session.

1           32. The method of Claim 31, wherein said step of  
2 determining further comprises:

3           transmitting a feature code indicating that said MS  
4 is in data mode when said data session begins from said  
5 MS to said node.

1           33. The method of Claim 32, wherein said node is a  
2 Mobile Services Switching Center and further comprising:

3           storing said feature code within a Visitor Location  
4 Register associated with said Mobile Services Switching  
5 Center.

1           34. The method of Claim 33, wherein said step of  
2 routing further comprises:

3           routing said electronic message from said Mobile  
4 Services Switching Center to a Packet Data Service Node  
5 in wireless communication with said MS for said data  
6 session; and

7           delivering said electronic mail message from said  
8 Packet Data Service Node to said MS.

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1           35. The method of Claim 31, wherein said node is a  
2 Base Station Controller, and wherein said step of routing  
3 further comprises:

4           routing said electronic message from said Base  
5 Station Controller to a Packet Data Service Node in  
6 wireless communication with said MS for said data  
7 session; and

8           delivering said electronic mail message from said  
9 Packet Data Service Node to said MS.

1           36. The method of Claim 31, wherein said node is a  
2 Base Station Controller, and wherein said step of routing  
3 further comprises:

4           determining, by said Base Station Controller,  
5 routing information associated with said MS for said data  
6 session; and

7           delivering said electronic mail message from said  
8 Base Station Controller to said MS using said routing  
9 information.

1           37. The method of Claim 31, wherein said step of  
2 receiving further comprises:

3           receiving said SMS message from a Short Message  
4 Service Center.

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1           39. The method of Claim 31, wherein said step of  
2       routing further comprises:  
3           routing said electronic mail message to said MS  
4       using an electronic mail address for said MS.